

CLAIMS

I/WE CLAIM:

1. A rotating mold support comprising:

first and second platen mounts attachable to the opposed platens of a standard injection-molding machine and providing opposed mold attachment surfaces for a first and second mold portion, respectively, and adjacent track attachment surfaces;

5 at least one extensible support track attached to and extending between the track support areas of the first and second platen mounts to span the distance between the first and second platen mounts for a plurality of separations of the first and second platen mounts along a mold separation axis;

10 a rotatable mold stage attached to a middle part of the extensible support track and having a table surface supporting a third mold portion for rotation about an axis perpendicular to the mold separation axis;

whereby frameless mold support may be obtained without modification to or dependence on the injection-molding machine.

2. The rotating mold support of claim 1 wherein the mold attachment surfaces are above the track attachment surfaces on each of the first and second platen mounts.

3. The rotating mold support of claim 2 wherein the third mold portion is supported solely by the upper table surface during rotation.

4. The rotating mold support of claim 1 wherein the extensible support track includes first and second parallel rails extending along the mold separation axis, wherein the first parallel rail is attached to the first platen mount and the second parallel rail is attached to the second platen mount, wherein the first and second parallel rails slidably engage with a support element over a support span, the support element forming the middle part of the extensible support track;

5. The rotating mold support of claim 4 wherein the support span has a width measured along the mold separation axis greater than a width of the third mold part measured along the mold separation axis.

6. The rotating mold support of claim 4 wherein the parallel rails have a cross-sectional height measured vertically that is more than two times their cross-sectional width measured horizontally.

7. The rotating mold support of claim 1 wherein first and second parallel rails include opposed racks and wherein the support element is positioned between the first and second parallel rails, and the support elements and includes a gear simultaneously engaging both racks to cause the support element to move equally  
5 with respect to the first and second platen supports.

8. The rotating mold support of claim 4 wherein the first and second parallel rails include opposed ways and wherein the support element is positioned between the first and second parallel rails and the support element include slides engaging the opposed ways of the first and second parallel rails to move freely along each.

9. The rotating mold support of claim 1 including at least two extensible support tracks substantially parallel to each other and displaced perpendicularly to the mold separation axis.

10. The rotating mold support of claim 1 wherein the first and second platen mounts are substantially flat plates.

11. The rotating mold support of claim 1 wherein the extensible support track includes first and second parallel rails extending along the mold separation axis, wherein the first parallel rail is attached to the first platen mount and the second parallel rail is attached to the second platen mount, wherein the first and  
5 second parallel rails slidably communicate through a set of at least two mutually sliding support element over a support span, the support elements forming the middle part of the extensible support track.

12. A method of molding parts with an injection-molding machine having movable opposed platens comprising the steps of:

(1) attaching a first and second platen mount to the opposed platens of a standard injection-molding machine, the first and second platen supports providing upper opposed molds support surfaces for a first and second mold portion, respectively, and lower track attachment surfaces, wherein at least one extensible support track is attached to and extends between the track support areas of the first and second platen mounts to span the distance between the first and second platen mounts for a plurality of separations of the first and second platen mounts along a mold separation axis, and wherein a rotatable mold stage is attached to a middle part of the extensible support track and having an upper table surface providing rotation about an axis perpendicular to the mold separation axis;

(2) attaching a first mold portion to the first platen mount, a second mold portion to the second platen mount and a third mold portion to the upper table surface;

(3) moving the mold portions together along the mold axis to receive a first injection of plastic;

(4) separating the mold portions along the mold axis so that the combined separation between the first and third mold portions and the second and third mold portions exceeds the width of the third mold portion;

(5) removing a molded part from at least one of the mold portions;

(6) rotating the third mold portion on the upper table surface; and

(7) moving the mold portions together along the mold axis to receive a second injection of plastic.